

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/07/07

Date Received: 07/26/07

Project: Plasma H2O, PO# M117099, F&BI 707349

Date Analyzed: 07/27/07

**RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR pH
USING EPA METHOD 9040C**

Sample ID

Laboratory ID

pH

M117099A Pre Filter

707349-01

6.24

M117099B Post Filter

707349-02

5.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/07/07

Date Received: 07/26/07

Project: Plasma H2O, PO# M117099, F&BI 707349

**QUALITY ASSURANCE RESULTS
FROM THE ANALYSIS OF WATER SAMPLES
FOR pH BY METHOD 9040C**

Laboratory Code: 707349-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
pH	6.24	6.32	1	0-20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 - More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - The sample was diluted due to insufficient sample volume. Detection limits are raised due to dilution.

fb - The analyte indicated was found in the method blank. The result should be considered an estimate.

fc - The compound is a common laboratory and field contaminant.

fp - Compounds in the sample matrix interfered with quantitation of the analyte. The reported concentration may be a false positive.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - The sample was extracted outside of holding time. Results should be considered estimates.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration should be considered an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The pattern of peaks present is not indicative of diesel.

y - The pattern of peaks present is not indicative of motor oil.

SAMPLE CHAIN OF CUSTODY

BQ60664

Send Report To Michael Erdahl
 Company Friedman and Bruya, Inc.
 Address 3012 16th Ave W
 City, State, ZIP Seattle, WA 98119
 Phone # (206) 285-8282 Fax # (206) 283-5044

SAMPLERS (signature)

PROJECT NAME/NO.

707349

PO #

H-1004

REMARKS

Please ~~See~~ ^{Email} ResultsPage # 1 of 1

TURNAROUND TIME

☐ Standard (2 Weeks)
☒ RUSH 9/1/07

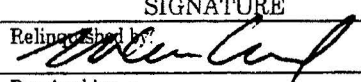
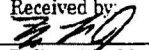
Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED											Notes
						O&G w/o SG	O&G w/sg	Total Hg	Dissolved Hg	EPH	VPH	Nitrate	Barium Fe	Hardness	TDS	Silica	
M117099A Prefilter		7/26	1700	w	1								x	x	x	x	-01
M117099B Post Filter		↓	1700	w	1												-02

Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282
 Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Michael Erdahl	Friedman & Bruya	7/26/07	10:00 AM
Received by: 	Francisco Lara, Jr.	TA-5 w/ 20.4°C	7/30/07	1600
Relinquished by:				
Received by:				

August 03, 2007

Michael Erdahl
Friedman & Bruya
3012 16th Ave W
Seattle, WA/USA 98119-2029

RE: Michael Erdahl


Enclosed are the results of analyses for samples received by the laboratory on 07/30/07 16:00.
The following list is a summary of the Work Orders contained in this report, generated on 08/03/07
08:46.

If you have any questions concerning this report, please feel free to contact me.

<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
BQG0664	Michael Erdahl	707349

TestAmerica - Seattle, WA

*The results in this report apply to the samples analyzed in accordance with the chain
of custody document. This analytical report shall not be reproduced except in full,
without the written approval of the laboratory.*


Curtis D. Armstrong, Project Manager



Friedman & Bruya

3012 16th Ave W
Seattle, WA/USA 98119-2029

Project Name: **Michael Erdahl**
Project Number: 707349
Project Manager: Michael Erdahl


Report Created:
08/03/07 08:46

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
M117099A Prefilter	BQG0664-01	Water	07/26/07 17:00	07/30/07 16:00
M117099B Postfilter	BQG0664-02	Water	07/26/07 17:00	07/30/07 16:00

TestAmerica - Seattle, WA

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Curtis D. Armstrong, Project Manager

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AKC-0006744

Friedman & Bruya

3012 16th Ave W
 Seattle, WA/USA 98119-2029

Project Name: **Michael Erdahl**
 Project Number: 707349
 Project Manager: Michael Erdahl

Report Created:
 08/03/07 08:46

Total Metals by EPA 6000/7000 Series Methods
 TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0664-01 (M117099A Prefilter)		Water		Sampled: 07/26/07 17:00						
Iron	EPA 6010B	ND	-----	0.150	mg/l	1x	7G31036	07/31/07 13:31	08/02/07 14:33	
BQG0664-02 (M117099B Postfilter)		Water		Sampled: 07/26/07 17:00						
Iron	EPA 6010B	0.794	-----	0.150	mg/l	1x	7G31036	07/31/07 13:31	08/02/07 14:37	

TestAmerica - Seattle, WA

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Curtis D. Armstrong, Project Manager

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AKC-0006745

Friedman & Bruya

3012 16th Ave W
 Seattle, WA/USA 98119-2029

Project Name: **Michael Erdahl**
 Project Number: 707349
 Project Manager: Michael Erdahl

Report Created:
 08/03/07 08:46

Conventional Chemistry Parameters by APHA/EPA Methods

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0664-01 (M117099A Prefilter)		Water		Sampled: 07/26/07 17:00						
Hardness	SM 2340B	28.2	-----	3.00	mg/L as CaCO ₃	1x	7G31036	07/31/07 13:31	08/02/07 14:33	
BQG0664-02 (M117099B Postfilter)		Water		Sampled: 07/26/07 17:00						
Hardness	SM 2340B	ND	-----	3.00	mg/L as CaCO ₃	1x	7G31036	07/31/07 13:31	08/02/07 14:37	

TestAmerica - Seattle, WA



Curtis D. Armstrong, Project Manager

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Friedman & Bruya

3012 16th Ave W
 Seattle, WA/USA 98119-2029

Project Name: **Michael Erdahl**
 Project Number: 707349
 Project Manager: Michael Erdahl

Report Created:
 08/03/07 08:46

Miscellaneous Physical/Conventional Chemistry Parameters

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQG0664-01 (M117099A Prefilter)		Water		Sampled: 07/26/07 17:00						
Silica (SiO ₂)	SM 4500-Si D	10.4	-----	5.00	mg/l	25x	7H01051	08/01/07 15:52	08/01/07 15:52	
BQG0664-02 (M117099B Postfilter)		Water		Sampled: 07/26/07 17:00						
Silica (SiO ₂)	SM 4500-Si D	16.8	-----	5.00	mg/l	25x	7H01051	08/01/07 15:52	08/01/07 15:52	

TestAmerica - Seattle, WA



Curtis D. Armstrong, Project Manager

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Friedman & Bruya	Project Name: Michael Erdahl	Report Created:
3012 16th Ave W	Project Number: 707349	08/03/07 08:46
Seattle, WA/USA 98119-2029	Project Manager: Michael Erdahl	

Total Metals by EPA 6000/7000 Series Methods - Laboratory Quality Control Results
 TestAmerica - Seattle, WA

QC Batch: 7G31036 Water Preparation Method: EPA 3010A

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7G31036-BLK1)										Extracted: 07/31/07 13:31				
Iron	EPA 6010B	ND	---	0.150	mg/l	1x	--	--	--	--	--	--	08/02/07 13:55	
LCS (7G31036-BS1)										Extracted: 07/31/07 13:31				
Iron	EPA 6010B	5.36	---	0.150	mg/l	1x	--	5.00	107%	(80-120)	--	--	08/02/07 13:59	
Duplicate (7G31036-DUP1)										QC Source: BQG0630-01 Extracted: 07/31/07 13:31				
Iron	EPA 6010B	ND	---	0.150	mg/l	1x	ND	--	--	--	NR	(20)	08/02/07 14:09	R4
Matrix Spike (7G31036-MS1)										QC Source: BQG0630-01 Extracted: 07/31/07 13:31				
Iron	EPA 6010B	5.45	---	0.150	mg/l	1x	ND	5.00	109%	(60-137)	--	--	08/02/07 14:04	
Post Spike (7G31036-PS1)										QC Source: BQG0630-01 Extracted: 07/31/07 13:31				
Iron	EPA 6010B	4.92	---		ug/ml	1x	0.0416	5.00	97.5%	(75-125)	--	--	08/02/07 14:14	

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Curtis D. Armstrong, Project Manager



Friedman & Bruya	Project Name: Michael Erdahl	Report Created:
3012 16th Ave W	Project Number: 707349	08/03/07 08:46
Seattle, WA/USA 98119-2029	Project Manager: Michael Erdahl	

Conventional Chemistry Parameters by APHA/EPA Methods - Laboratory Quality Control Results
 TestAmerica - Seattle, WA

QC Batch: 7G31036 Water Preparation Method: EPA 3010A

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7G31036-BLK1)							Extracted: 07/31/07 13:31							
Hardness	SM 2340B	ND	---	3.00	mg/L as CaCO3	1x	--	--	--	--	--	--	08/02/07 13:55	
LCS (7G31036-BS1)							Extracted: 07/31/07 13:31							
Hardness	SM 2340B	35.2	---	3.00	mg/L as CaCO3	1x	--	33.1	106%	(85-115)	--	--	08/02/07 13:59	
Duplicate (7G31036-DUP1)							QC Source: BQG0630-01		Extracted: 07/31/07 13:31					
Hardness	SM 2340B	ND	---	3.00	mg/L as CaCO3	1x	ND	--	--	--	12.9%	(20)	08/02/07 14:09	R4
Matrix Spike (7G31036-MS1)							QC Source: BQG0630-01		Extracted: 07/31/07 13:31					
Hardness	SM 2340B	35.8	---	3.00	mg/L as CaCO3	1x	0.575	33.1	107%	(80-120)	--	--	08/02/07 14:04	

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Curtis D. Armstrong, Project Manager



Friedman & Bruya

3012 16th Ave W
 Seattle, WA/USA 98119-2029

Project Name: **Michael Erdahl**
 Project Number: 707349
 Project Manager: Michael Erdahl

Report Created:
 08/03/07 08:46

Miscellaneous Physical/Conventional Chemistry Parameters - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: 7H01051 Water Preparation Method: General Preparation

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7H01051-BLK1)										Extracted: 08/01/07 15:52				
Silica (SiO2)	SM 4500-Si D	ND	---	0.200	mg/l	1x	--	--	--	--	--	--	08/01/07 15:52	
LCS (7H01051-BS1)										Extracted: 08/01/07 15:52				
Silica (SiO2)	SM 4500-Si D	1.07	---	0.200	mg/l	1x	--	0.999	107%	(85-115)	--	--	08/01/07 15:52	
Duplicate (7H01051-DUP1)										QC Source: BQG0658-01 Extracted: 08/01/07 15:52				
Silica (SiO2)	SM 4500-Si D	3.52	---	1.00	mg/l	5x	3.56	--	--	--	1.27%	(30)	08/01/07 15:52	
Matrix Spike (7H01051-MS1)										QC Source: BQG0658-01 Extracted: 08/01/07 15:52				
Silica (SiO2)	SM 4500-Si D	5.56	---	1.00	mg/l	5x	3.56	2.00	99.8%	(75-125)	--	--	08/01/07 15:52	

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Curtis D. Armstrong, Project Manager



Friedman & Bruya

3012 16th Ave W
Seattle, WA/USA 98119-2029

Project Name: **Michael Erdahl**
Project Number: 707349
Project Manager: Michael Erdahl

Report Created:
08/03/07 08:46

Notes and Definitions

Report Specific Notes:

R4 - Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.

Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B.
*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.
Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory.
Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica - Seattle, WA



Curtis D. Armstrong, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

August 7, 2007



INVOICE #07ACU0807-1

Accounts Payable
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

RE: Project Plasma H2O, PO# M117099, F&BI 707349 - Results of testing requested
by Gerry Thompson for material submitted on July 26, 2007.

2 samples analyzed for Total Iron (expedited) by Method 6010 @ \$72 per sample	\$ 144.00
2 samples analyzed for Silica (expedited) by Method 6010 @ \$63 per sample	126.00
2 samples analyzed for pH by Method 9050A @ \$25 per sample	50.00
2 samples analyzed for Hardness (expedited) by Method SM2340 @ \$65 per sample	<u>130.00</u>
Amount Due	\$ 450.00

FEDERAL TAX ID # (b) (6)

707349

SAMPLE CHAIN OF CUSTODY

ME 07/26/07

AT 4

Send Report To Geoff Thompson
 Company ALASKA Copper Works
 Address 628 S. Harbor St
 City, State, ZIP Seattle WA 98134
 Phone # 206-571-6033 Fax # 206-382-4509

SAMPLERS (signature) [Signature]

Page # _____ of _____

PROJECT NAME/NO.

PO #

PLASMA H2OM117099

REMARKS

TURNAROUND TIME

☐ Standard (2 Weeks)☒ RUSH 4 day

Rush charges authorized by: _____

SAMPLE DISPOSAL

☐ Dispose after 30 days☐ Return samples☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED										Notes			
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Handovers	Iron, PH	Silica	Total d.s. Solids				
M117099A	01	7/26/07	1230	H2O	1														
Pre Filter																			
M117099B																			
Post Filter	02	7/26/07	1230	H2O	1														

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282 Fax (206) 283-5044 FORMS\COC\COC.DOC	SIGNATURE		PRINT NAME		COMPANY		DATE		TIME		
	Relinquished by: <u>[Signature]</u>		G. Thompson		H2O		7/26/07		2:10 PM		
	Received by: <u>[Signature]</u>		Nhan Phan		Fe B I		7/26/07		2:10		
	Relinquished by:										
Received by:											

Samples received at 30 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

August 7, 2007

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on July 26, 2007 from the Plasma H2O, PO# M117099, F&BI 707349 project. There are 3 pages included in this report. The samples were sent to Test America for hardness, iron, silica, and total dissolved solids analyses. There was insufficient sample to perform TDS analysis. The report is enclosed.

Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl
Project Manager

Enclosures
ACU0807R.DOC